

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

#### (PCT Article 36 and Rule 70)

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Applicant's or agent's file reference 11307P5 WO/JMH	FOR FURTHER ACTION	
See Form PCT/IPEA/416		
International application No. PCT/GB2004/003658	International filing date (day/month/year) 26.08.2004	Priority date (day/month/year) 29.08.2003
International Patent Classification (IPC) or national classification and IPC A01N25/00, A01N25/34		
Applicant RECKITT BENCKISER (Australia) LIMITED		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
  - a.  (sent to the applicant and to the International Bureau) a total of 7 sheets, as follows:
    - sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
    - sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
  - b.  (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

Date of submission of the demand 27.05.2005	Date of completion of this report 19.09.2005
Name and mailing address of the international preliminary examining authority: European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Fort, M Telephone No. +31 70 340-4123



**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/GB2004/003658

**Box No. I Basis of the report**

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
  - This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
    - international search (under Rules 12.3 and 23.1(b))
    - publication of the international application (under Rule 12.4)
    - international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

**Description, Pages**

1-28 as originally filed

**Claims, Numbers**

1-57 received on 27.05.2005 with letter of 26.05.2005

- a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3.  The amendments have resulted in the cancellation of:
  - the description, pages
  - the claims, Nos.
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):
4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
  - the description, pages
  - the claims, Nos.
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes: Claims	1-57
	No: Claims	
Inventive step (IS)	Yes: Claims	1-57
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-57
	No: Claims	

**2. Citations and explanations (Rule 70.7):**

**see separate sheet**

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(SEPARATE SHEET)**

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**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

Reference is made to the following documents:

D1: US 3 162 575

D2: JP 54 132237 (see Derwent Abstract)

D3: GB 2 221 392

The document D2 discloses a cockroach attractant which may be used in the form of sticks. The formulation is made of an attractant which contains 35-50% fish meal (or meat powder), 40- 50% wheat flour, 5 to 10% soybean oil cake, 1-3% rice bran, 1-5% yeast. The balance is a mixture of sesame oil cake, base materials including bread powder, pupa powder, soybean flour, starch. The ratio of base to attractant mixture is 5-1:3-1. An insecticide can be added. Since amended claim 1 is limited to solid compositions having a defined penetration hardness and since there is no disclosure in D2 of such a penetration hardness, the objection as to lack of novelty based on D2 is not maintained. Since novelty has not been questioned vis-à-vis each of documents D1 and D3, the subject-matter of claim 1-57 is novel (Article 33(2) PCT).

D1 which is considered as the closest prior art discloses insecticidal stick compositions comprising a base, an insecticide and up to 50% sucrose.

The problem underlying the present invention may be seen as that of providing a solid insecticidal composition that is suitable for and effective when applied to a hard surface. The claimed stick insecticidal composition comprises a base, an insecticide and at least 60 wt% food material, the composition having a penetration hardness of from 0.1 to 5 mm. Thus the solution provided by the present application consists in increasing the hardness of the solid compositions whilst at the same time increasing the level of food material in the compositions. The use of harder compositions makes the sticks easier to handle. Furthermore, the use of higher amounts of food material provides the added benefit of leaving less residual material on the hard surface. Such a solution is not obvious in the light of the teaching of D1 since the stick compositions of D1 are applied to the faces of animals and are primarily targeted at flies and since there is no incentive to prepare

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(SEPARATE SHEET)**

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sticks having a lower penetration hardness than the stick prepared according to D1 which shows an average penetration hardness of 5,59 mm.

The subject-matter of claims 1-57 can therefore be considered as being inventive (Article 33(3) PCT).

The subject-matter of claims 1-57 is considered to be industrially applicable and the present application is therefore considered to satisfy the criterion set forth in Article 33(4) PCT.

CLAIMS

1. A solid stick insecticidal composition comprising a base, an insecticide and at least 60 wt% food material, the composition having a penetration hardness of 5 from 0.1 to 5 mm.
2. An insecticidal composition according to claim 1 comprising at least 65, preferably at least 70 and more preferably at least 75 wt% food material.
- 10 3. An insecticidal composition according to claim 1 or claim 2 comprising up to 99.99 wt% food material.
4. An insecticidal composition according to any preceding claim comprising food material selected from
  - 15 (i) carbohydrates;
  - (ii) protein/carbohydrate containing;
  - (iii) fatty or oily materials; and mixtures thereof.
- 20 5. An insecticidal composition according to claim 4, in which the carbohydrates are selected from
  - (i) honey;
  - (ii) sugars including monosaccharides and disaccharides;
  - (iii) polysaccharides and complex carbohydrates including cellulosic materials, 25 pectin and starches; and mixtures thereof.
6. An insecticidal composition according to claim 4 or claim 5, in which the protein/carbohydrate containing materials are selected from:
  - 30 (i) cereal products,
  - (ii) flour, including soya flour;
  - (iii) spices;
  - (iv) vegetable products including dehydrated vegetables;
  - (v) dried yeast;
  - 35 (vi) egg powder;

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(vii) insect-derived materials including silkworm pupa, eggs and body parts;  
and  
mixtures thereof.

5 7. An insecticidal composition according to any one of claims 4 to 6, in which the  
fatty or oily materials are selected from:  
(i) lipids;  
(ii) essential oils;  
(iii) fully hydrogenated fatty acids;  
10 (iv) vegetable oils;  
(v) animal-derived fats;  
(vi) esters;  
(vii) waxes;  
(viii) soaps;  
15 (ix) phospholipids;  
(x) glycolipids;  
(xi) terpenes;  
(xii) steroids; and  
mixtures thereof.

20 8. An insecticidal composition according to any preceding claim comprising at  
least 10, preferably at least 20 and more preferably at least 30 wt% base  
ingredients.

25 9. An insecticidal composition according to any preceding claim comprising base  
ingredients selected from fatty alcohols, fatty acids, various esters including  
lower alkyl esters of fatty acids, castor oil, mineral oils, petroleum jellies,  
polyethylene glycols, monoalkanolamides, carnauba wax, candelilla wax,  
amorphous hydrocarbon waxes, petroleum-based waxes including  
30 microcrystalline waxes, beeswax, paraffin waxes, cocoa butter, hydrogenated  
vegetable oils, lanolin, lanolin absorption bases, paraffin oils, lecithin, silicone  
waxes, flour, monoglycerides and animal derived-fats including tallow, lard,  
suet and duck fat.

10. An insecticidal composition according to any preceding claim comprising one or more dual functionality materials acting as both a food material and a base ingredient.
- 5 11. An insecticidal composition according to claim 10, in which the dual functionality material is selected from hydrogenated palm stearine, tallow, lard, suet, duck fat, monoglycerides, flours and lecithins.
- 10 12. An insecticidal composition according to any preceding claim in which the base comprises one or more emulsifying agents.
- 15 13. An insecticidal composition according to any preceding claim, in which the insecticide is selected from pyrethroids, neonicotinoids, avermectins, spinosyns, hydramethylnon, fluorinated sulfluoramides, organophosphates, pyrazoles, chlorfenapyr, indoxacarb, borates, benzoylphenyl ureas, carbamates, hydrazones and mixtures thereof.
- 20 14. An insecticidal composition according to claim 13, in which the insecticide comprises an organophosphate.
15. An insecticidal composition according to claim 14, in which the organophosphate is chlorpyrifos.
- 25 16. An insecticide according to claim 13, in which the insecticide comprises a pyrazole.
17. An insecticide according to claim 16, in which the pyrazole is fipronil.
- 30 18. An insecticide according to claim 13, in which the insecticide comprises an indoxacarb.
19. An insecticidal composition according to any preceding claim comprising insecticide in an amount of from 0.01 to 40 wt%, preferably from 0.01 to 20 wt% and more preferably from 0.01 to 10 wt%.

20. An insecticidal composition according to any preceding claim comprising an attractant.
21. An insecticidal composition according to claim 20, in which the food material also functions as an attractant.
22. An insecticidal composition according to claim 21, in which soya bean oil is a food material and an attractant.
- 10 23. An insecticidal composition according to claim 21 or claim 22, in which honey is a food material and an attractant.
24. An insecticidal composition according to any one of claims 21 to 23, in which malt extract is a food material and an attractant
- 15 25. An insecticidal composition according to any one of claims 21 to 24, in which maple lactone is a food material and an attractant.
26. An insecticidal composition according to claim 25, in which maple lactone is present in an amount of from 0.001 to 1 wt%, preferably from 0.005 to 0.5 wt %.
- 20 27. An insecticidal composition according to any one of claims 20 to 26 comprising an attractant which does not function as a food material.
- 25 28. An insecticidal composition according to any preceding claim further comprising a preservative.
29. An insecticidal composition according to claim 28, in which the preservative is present in an amount of from 0.0001 to 10 wt%.
- 30 30. An insecticidal composition according to claim 28 or claim 29, in which the preservative is selected from sorbic acid and salts thereof, methylparaben, propylparaben and mixtures thereof.

31. An insecticidal composition according to any preceding claim further comprising an anti-oxidant.
32. An insecticidal composition according to claim 31, in which the anti-oxidant is present in an amount of from 0.0001 to 10 wt%.
33. An insecticidal composition according to claim 31 or claim 32, in which the anti-oxidant is selected from TBHQ, butylated hydroxytoluene, butylated hydroxyanisole and mixtures thereof.
34. An insecticidal composition according to any preceding claim further comprising a human taste deterrent
35. An insecticidal composition according to claim 34, in which the human taste deterrent is present in an amount of from 1 to 200 ppm.
36. An insecticidal composition according to claim 34 or claim 35, in which the human taste deterrent is denatonium benzoate.
37. An insecticide composition according to any preceding claim further comprising a colorant.
38. An insecticidal composition according to any preceding claim further comprising one or more other components selected from feeding stimulants, and fillers and animal taste deterrents.
39. An insecticidal composition according to any preceding claim having a penetration hardness of from 0.5 to 5 mm.
40. An insecticidal composition according to claim 39 having a penetration hardness of from 1 to 5 mm.
41. An insecticidal composition according to any preceding claim 40 having a penetration hardness of from 1 to 4 mm.

42. An insecticidal composition according to any preceding claim having a melting point of at least 20°C, preferably at least 35°C, more preferably at least 40°C and most preferably at least 45°C.
- 5 43. An insecticidal composition according to any preceding claim having a setting point in the range from 20 to 200°C, preferably from 30 to 70°C and more preferably from 45 to 55°C.
- 10 44. A method for controlling insects in which a solid stick insecticidal composition according to any one of claims 1 to 42 is applied and deposited on to a hard surface to be treated.
- 15 45. A method for controlling insects according to claim 44, in which the insecticidal composition is applied as a line of material by drawing the stick along the surface.
46. A method for controlling insects according to claim 44, in which the insecticidal composition is applied as a series of spots on the surface.
- 20 47. A method for controlling insects according to claim 44, in which the insecticidal composition is applied as a smear on the surface.
48. A method for controlling insects according to any one of claims 44 to 47, in which the insects which crawl.
- 25 49. A method for controlling insects according to claim 48, in which the insects are cockroaches.
50. An insect control product comprising a solid stick insecticidal composition according to any one of claims 1 to 43 and a package.
- 30 51. An insect control product according to claim 50 in which the package comprises a protective wrapping.
- 35 52. An insect control product according to claim 51 in which the protective wrapping comprises paper, plastic, fabric, metal foil or laminates.

53. An insect control product according to claim 51 or claim 52, in which the wrapping includes tear lines or points of weakness at intervals along the length of the wrapping thus allowing for progressive removal of circumferential strips of wrapping from the stick.
- 5 54. An insect control product according to claim 50 in which the package comprises an applicator including a bottom, in which is held one end of the stick, and a tubular lid, which partially or fully encloses the insecticidal stick.
- 10 55. An insect control product according to claim 50 in which the package comprises an applicator in which the insecticidal stick is extendable from a casing.
56. An insect control product according to any one of claims 50 to 54 in which the package comprises a label or a label is applied to the package.
- 15 57. Use of an insecticide and a food material in the manufacture a solid stick insecticidal composition according to any one of claims 1 to 43 for application to a hard surface to be treated.